

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: N. Iwata, et al.

EXAMINER: Kiliman, L. (parent)

U.S.S.N.: Not Yet Assigned

GROUP: 1773 (parent)

FILED: HEREWITH

FOR: MAGNETO-OPTICAL RECORDING MEDIUM AND REPRODUCING
DEVICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

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CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service, in an envelope as "Express Mail Post Office Addressee" Mailing Label Number EL931635975US addressed to the Commission of Patents and Trademarks, PO BOX 2327, Arlington, Virginia 22202, on November 21, 2001.

By: 

Fatima H. De Arruda

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PRELIMINARY AMENDMENT

Sir:

Please preliminarily amend the subject application as follows and before calculating the filing fee therefor:

IN THE SPECIFICATION

Page 1, before line 1 insert and add the following paragraph:

This application is a divisional of co-pending U.S. application serial number 09/458,392, filed December 10, 1999 (now allowed), the teachings of which are incorporated herein by reference.

IN THE CLAIMS

Cancel claims 2-16 without prejudice.

Add new claims 17-19 that read as follows:

17. A method of reproducing a signal from a magneto-optical recording medium including at least first, second and third magnetic layers, which are layered in this order, wherein said first magnetic layer is formed of a perpendicularly magnetized film which a relatively small wall coercivity and a relatively large wall mobility compared with said third magnetic layer in a vicinity of a predetermined temperature, and the wall coercivity of which changes as temperature changes in a vicinity of the predetermined temperature, said method comprising the steps of:

emitting a light beam onto the magneto-optical recording medium from a side of said first magnetic layer so as to copy a signal recorded in said third magnetic layer to said first magnetic layer and to move a domain wall of a magnetic domain corresponding to the signal copied to said first magnetic layer; and

controlling an intensity of said light beam so that a domain wall moved from the rear part of a light beam spot does not enter into the light beam spot, whereby only a signal entered in the light beam spot by the movement of a domain wall from a front part of the light beam spot is reproduced.

18. A magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order, wherein:

said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in vicinity of a predetermined temperature, and

when a light beam whose intensity is controlled to be a predetermined intensity for reproducing a signal is emitted onto the magneto-optical recording medium while the light beam being moved relatively with respect to the magneto-optical recording medium, said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot.

19. A reproducing device applicable to a magneto-optical recording medium including at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order, comprising:

light emitting means for emitting a light beam onto the magneto-optical recording medium when reproducing; and

control means for controlling an intensity of the light beam emitted from said light emitting means such that

i) a signal recorded in said third magnetic layer is copied to said first magnetic layer,

ii) a magnetic wall of a magnetic domain having copied thereto the signal is moved, and

iii) a domain wall moved from a rear part of the light beam spot does not enter into a light beam spot, and only a domain wall moved from a front part of the light beam enters into the light beam spot.

REMARKS

Applicants respectfully request that the subject application be preliminarily amended as provided in the foregoing amendment prior to calculation of the filing fees. Applicants also respectfully request the Examiner to consider the foregoing added claims in the first Office Action on the merits.

The specification was amended to provide the appropriate cross-referencing to the parent application.

The foregoing amendments to the claims are supported by the originally filed disclosure.

Included herewith is a marked-up version of the amendments to the subject application by the current amendment. The marked-up versions are found on the pages captioned or entitled "Details of Amendments" that follow the signature page of the within Response.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

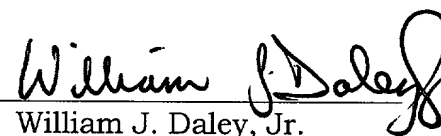
Applicants believe that additional fees are not required for consideration of the within Preliminary Amendment. However, if for any reason a fee is required, a fee paid

APPLICANT: N. Iwata, et al.
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Preliminary Amendment
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is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,
EDWARDS & ANGELL, LLP
DIKE, BRONSTEIN, ROBERTS & CUSHMAN
Intellectual Property Practice Group

Date: November 21, 2001

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DETAILS OF AMENDMENTS

IN THE SPECIFICATION

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17. A method of reproducing a signal from a magneto-optical recording medium including at least first, second and third magnetic layers, which are layered in this order, wherein said first magnetic layer is formed of a perpendicularly magnetized film which a relatively small wall coercivity and a relatively large wall mobility compared with said third magnetic layer in a vicinity of a predetermined temperature, and the wall coercivity of which changes as temperature changes in a vicinity of the predetermined temperature, said method comprising the steps of:

emitting a light beam onto the magneto-optical recording medium from a side of said first magnetic layer so as to copy a signal recorded in said third magnetic layer to said first magnetic layer and to move a domain wall of a magnetic domain corresponding to the signal copied to said first magnetic layer; and

controlling an intensity of said light beam so that a domain wall moved from the rear part of a light beam spot does not enter into the light beam spot, whereby only a signal entered in the light beam spot by the movement of a domain wall from a front part of the light beam spot is reproduced.

18. A magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order, wherein:

said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in vicinity of a predetermined temperature, and

when a light beam whose intensity is controlled to be a predetermined intensity for reproducing a signal is emitted onto the magneto-optical recording medium while the light beam being moved relatively with respect to the magneto-optical recording medium, said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot.

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light emitting means for emitting a light beam onto the magneto-optical recording medium when reproducing; and

control means for controlling an intensity of the light beam emitted from said
light emitting means such that

- i) a signal recorded in said third magnetic layer is copied to said first magnetic layer,
- ii) a magnetic wall of a magnetic domain having copied thereto the signal is moved, and
- iii) a domain wall moved from a rear part of the light beam spot does not enter into a light beam spot, and only a domain wall moved from a front part of the light beam enters into the light beam spot.